Minimally Invasive Coronary artery Bypass Grafting(MICABG),Catharina experience

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Introduction: The major cause of complications during coronary artery bypass grafting (CABG) is related to cardiopulmonary bypass (CPB) and cardioplegia, which in turn may lead to perioperative myocardial infarction in 5-10% of patients. Furthermore, hemodilution, reduced mean perfusion pressure to brain during CPB, cannulation, and clamping and manipulation of the aorta required for construction of proximal anastomoses expose patients to the risk of stroke.(1)Minimally invasive direct CABG (MIDCAB) has developed as a method to offer the advantages of surgical revascularization in combination with the reduced morbidity of interventional procedure.(2) This article presents the operative mortality and morbidity and 6-month outcome of an initial series of patients who underwent minimally invasive CABG.
Patients & methods : From March 1996 to July 1998, 109 patients with coronary artery disease underwent minimally invasive CABG procedures either through mini-thoracotomy (MIDCAB)[84 patients] or through conventional sternotomy (Off-pump CABG) [25 patients]. The mean age of the patients was 63 years. Seventy nine were males and 30 were females. The choice of MIDCAB or midsternal approach (Off-pump CABG) was made by the individual surgeon and each patient, but was not randomized or based on special selection criteria. Through the midsternal incision, the anastomoses were also performed on a beating heart using either the Octopus [21 patients], or Origin [4 patients] apparatus to stabilize the ventricle. Pharmacologic reduction of heart rate with *B*-blockers, calcium blockers or adenosine was not used. Only in 33 patients, and due to preference of surgeons, a Doppler flow probe was used to evaluate systolic and diastolic flow velocity in the LIMA pedicle after construction of the anastomosis.
Results: Preoperative data were as follows: prior PTCA (42 pts.), prior CABG (38 pts.), myocardial infarction[MI] (33 pts.),NYHA class IV (20 pts), diabetes (16 pts.), hupertension (15 pts.), COPD (7 pts.) and EF< 40% (20 pts.). In 103 patients, only the LAD had to be grafted (one vessel disease). In 6 patients, the right coronary was also grafted either with the LAD [3 pts] or with the diagonal branch [3 pts.] (two vessel disease. All patients received LIMA anastomosis to the LAD or diagonal branch. In one patient, RIMA was used for RCA anstomosis and venous graft for the other 2 patients. In 5 patients of the MIDCAB group, venous extension was used to prolong the LIMA (only during the first year of the experience). The mean flow through the LIMA was 20 ml/sec. Operative mortality included one patients who had preoperative severely depressed ventricular function (EF=22%), and very small LAD ($\pm$ 0.5 mm). Conversion into CPB was done in 3 patients, one due to VF, and the others due to progressive ischemia and hemodynamic disturbance during occlusion of the target vessel. Three patients received extra vein graft during the first postoperative day due to mammary hypoperfusion. Postoperative myocardial infarction occurred in 5 patients. The mean blood loss was 656.6 $\pm$ 83 ml. However, after exclusion of patients who didn't receive protamine, this mean decrease to 386 $\pm$ 140 ml (p<0.05). The mean duration of stay in the ICU was 27.9 $\pm$ 7 hours. In the six-month follow up, there was no mortality. Postoperative angiography was performed in 23 patients and showed patent graft in 18 patients, stenosis distal to the graft in 4 patients, and graft occlusion in one patient. In 11 patients, intervention was done due to progression of coronary disease in other vessels.{7 PTCA and 4 TMR} . One patients underwent CABG due to progressive postoperative ischemia.
Discussion: This study presents the operative results and the postoperative outcome of an initial group of patients having minimally invasive CABG operations. Our data show that the procedure is as safe as traditional CABG for single or double-vessel coronary artery disease. There was only one operative death (0.9%) in a very high risk patient. No serious postoperative morbidity occurred in this group. The postoperative blood loss is relatively high because one of our surgeon prefer not to give protamine for reversal of minimal dose heparin. If this group of patient was excluded, the incidence of postoperative bleeding was significantly lower. It also appears that these patients have a shorter length of stay which decrease the overall coasts. No death resulted from cardiac causes in the first 6 months after operation. No routine postoperative angiography was done in this series. The graft was patent in 22 out of 23 patients (94.6%) who had postoperative angiography. In conclusion, despite the small number of our patients, we suggest that minimally invasive CABG has the potential to expand the benefits of coronary revascularization specially in risky patients. Long-term follow up of these clinical results is therefore warranted.

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Emergency and First Aid Surgery

Laparoscopy for abdominal emergencies: a Community Hospitals' experience

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Introduction: Due to the recent expansion and acceptance of laparoscopic surgery by surgeons and, we must say, by the public in general, this technique is questioned as a feasible methods of treating patients with "emergency" abdomen. **Objectives:** to assess the routine use of "emergency" laparoscopy in a Community Hospital Setting. **Methods:** From 4/'94 to 5/'98, of 1016 "emergency" abdominal surgical procedures done in our Department, 783 (77%) were diagnostic and operative laparoscopy (Acute small bowel obstruction: 26 cases; Gastroduodenal ulcer disease: 15 cases; biliary system disease: 398 cases; "pelvic" disease: 305 cases; Colon pathologies: 39 cases). They represent the 24.4 % of all the laparoscopic procedures done in the same period at our Institutions. Laparoscopic was not performed in patients with: history of previous abdominal approach to malignant disease; history of more than two major abdominal surgery; peritoneal sign and/or massive bowel distension; and in patients whose general conditions and old age contraindicate this approach. **Results:** Conversion rate was 6.2% (49 cases) with morbidity rate of 3.4% (25 cases) and mortality rate of 0.2 % (2 cases). A definitive diagnosis was provided in 763 (97.43%) cases with the possibility to treat, by laparoscopy, the 94.1% of them (718 cases). **Conclusions:** We do consider the laparoscopic approach in patients with an "emergency" abdomen feasible and safe in experienced hands which provides diagnostic accuracy as well as therapeutic capabilities. The increased surgical experience and the improvement of the laparoscopic general equipment led us to consider this technique a good alternative to the laparotomic one for an "emergency" approach to the abdomen.

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Thraumatic diaphragm hernias: our experience.

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Introduction: The authors report the retrospective analysis of 5 cases of thraumatic diaphragm hernias due to blunt thoraco-abdominal thrauma observed and surgically treated between 01.1993 and 08.1998 in their unit. Such an analysis is also completed with an updated review of literature on the subject and the proposal of a diagnostic-therapeutic flow-chart based on chest-Xray sensitivity and thoraco-abdominal-CT scan specificity. **Methods and results:** 5 patients, all males, aging 43 average (range 21-73), came to our observation for multiple thrauma lesions secondary to road accidents with a left diaphragm hernia. All of them had their pre-surgery diagnosis at the standard Chest-Xray, and confirmed at the thoraco-abdominal CT. All patients underwent a diaphragm repair at an average of 9 hours after admission (range 0.5-31 hrs). All cases showed associated abdominal and bony lesions: in 1 case spleen and mesenteric lacerations. Neither intra- nor post-surgical deaths have been recorded. The average total in-hospital stay has been 18 days (range 8-26). **Discussion: Diaphragm areas involved:** in our experience the diaphragm breach involved the dome and the rib-phrenic sinus in 3/5 of cases; in one the dome only, and in one more the rib-phrenic sinus. **Herniated abdominal organs:** In our experience, we found stomach and spleen in 4/5 of cases and colon in 3/5. **Diagnosis:** standard chest-X ray is the first diagnostic step, being the most sensitive. Its specificity can be increased by positioning a NGT and X-raying the patient after injecting a water soluble contrast medium. The most specific test to diagnose a blunt diaphragm hernia is anyway CT. In our experience chest Xray showed highly suspicious lesions (diaphragm asimmetry + immobility associated with a PNX in 1 case) in 4/5 of cases, while in 2/5 there were characteristic radiological signs. In 1/5 of cases, the diagnostic association chest Xray + NGT + Gastrografin was immediately diagnostic. **Surgical treatment:** total laparotomy (easier to carry out, less thraumatic, allowing a better evaluation of the peritoneal damages) has been the incision of choice carried out in our 5 cases experience. Breach repair: it is commonly performed by a single layer, continuous permanent monofilament suture, especially for the easiest lesions to treat (those involving only the rib-phrenic sinus, the transversal breaches or those without tissue loss). We started using a double layer long lasting re-absorbable suture applied by single stitches in 3/5 of cases, then we progressively modified our choice to a single layer, continuous long lasting suture (1 case) and then to a single layer, continuous permanent monofilament suture (1 case). The on-going follow up will show the outcomes due to the different adopted techniques. **Conclusions;** 1)the impact of safety belts wider use on number and kinds of lesions secondary to blunt thoraco-abdominal thrauma has to be deeper investigated. 2) The diagnostic protocol of post-thrauma hernias is based on the standard chest X-ray, the most sensitive imaging technique, with all possible technical tips to increase its specificity. The most specific diagnostic test is anyhow CT scan. 3) A carefull exploration of diaphragm in laparotomies for thrauma patients has always to be carried out. 4) The high mortality of lesions due to blunt thoraco-abdominal thrauma, is due to the associated multi-organ injuries of thrauma patients.

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EMERGENCY LAPAROSCOPIC SURGERY:
OUR EXPERIENCE

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In our structure, accorded with italian N.S.S. end equipped with an Emergency Service that made 30.000 performans every year, we begun to approach laparoscopic surgery in patients with abdominal acute pain with intestinal sub-occlusion associated or not We used laparoscopic approach for 41 cases with dignosis of acute abdomen. Introduceing laparoscope, we found 5 acute cholecistitis (2 converted), 18 cases of acute appendicitis, 6 extra-uterine pregnancies, 6 ovarian broken cists and 4 cases of stenosis of right colon. We send these last four cases to clinic study for laparotomic surgery that showed intestinal carcinoma. We didn't have operative difficulty, performed all the operation by the references. We didn't have any complications and all patients were discharged within 3th post operative day**.** In one case, symptoms were for sub-acute appendicitis, with positive Mc Burney point. Echography discovered an anknown case of Viscerus Inversus. Diagnostic laparoscopy confirmed, through pictures, the inverse position of abdominal organs. During exploration of abdominal cavity, left appendix were non acute and no one pathology were about ovarian annexes and intestinal tract.

IS PROSTHETIC REPAIR HAZARDOUS FOR EMERGENCY HERNIOPLASTY?

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Introduction: Many surgeons consider emergency treatment of groin hernia to be an absolute contraindication to the use of prosthetic mesh because of the risk of infection or sepsis. Recent published series (1,2) suggest that these complications seem to be overestimated.

Methods: From April 1997 to January 1999, 41 patients (30 men and 11 women), aged from 35 to 89, presented with incarcerated or strangulated hernia as an emergency. In men, 30 inguinal hernias were observed compared with 8 inguinal hernias and 3 femoral hernias in women. Of the 41 patients, 11 presented with intestine obstruction. The correct diagnosis was made before operation on all cases. Epidural or spinal anaesthesia was performed in 38 patients, general in one, local in two. The content of hernia sac was: small intestine (28), sigmoid colon (3), omentum (4), peritoneal fat (6). Intestinal resection for irreversible necrosis was necessary in 3 patients. Trabucco's or Rutkow's techniques were performed in all cases, using Marlex (Bard, Davol) or Perfix (Bard, Davol) mesh. Routinary drain was positioned. Prophylactic antibiotics (cephazolin or cefuroxime) were applied for 5 days.

Results: No patient died. Excluding urinary ritention (2), post-operative morbidity was limited to local complications including scrotum ecchymosis and surgical infection (2), conservatively treated. The latter was not associated with intestinal resection. Long-term follow-up (>6 months) was available for 35 patients. No late infective complications neither recurrences were observed.

Discussion: Although the use of prosthesis is controversial or previously regarded as a contraindication in emergency hernioplasty, the present experience shows that the risk of infection is overestimated, as demonstrated from other studies (1,2). Polypropylene mesh is preferable to e-PTFE mesh for its greater tolerance to infections; polyester mesh should no longer be used. To minimize morbidity, some important points have to be respected: absence of identifiable sepsis (perforation or purulent peritoneal fluid), well experienced surgeon, small amounts of prosthetic material, on-lay mesh technique, supportive services of high quality.

Conclusions: Hernioplasty performed as an emergency does not contraindicate the use of a prosthesis although mesh repair remains hazardous in the presence of localized abscess or intestinal perforation.

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EMERGENCY TREATMENT OF STRANGULATED LAPAROCELES. OUR EXPERIENCE

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INTRODUCTION: The surgical treatment of abdominal wall defects represent for the surgeon a great problem, although he had also in emergency the possibility to use prosthetic materials, besides the traditional techniques with direct suture. The treatment in emergency of a laparocele go from 5 % to 40 % of all laparoceles, comparing the experiences reported in literature by many authors in the surgical treatment of this pathology. Strangulated laparocele is undoubtedly the complication more frequent. In this case the surgical treatment performed before a rapid decompression of the incarcerated intestine, and after the treatment of abdominal wall defects. We can safely state that, in presence of a strangulated laparocele , may be used also the prosthetic materials for surgical treatment, besides the direct plastic surgery; this is to be attributed to the availability of synthetic polymers highly biocompatible and ever more suitable to the needs of the surgeon, and also to the refining surgical techniques which allow to obtain the best possible use of its characteristics. **METHODS:** Between January 1990 and December 1998 we have treated 198 cases of laparoceles, 71 of which (35,85%) were treated in emergency, performing surgical intervention with placement of prosthesis in all patients of this group. The complications in this group of 71 patients were: strangulated intestine without peritonitis in 63 patients (88,73%), and strangulated intestine with peritonitis in 8 patients (11,27%). The prosthetic materials utilized in emergency were the following: polypropylene in 37 (52,12%) cases; dacron in 3 (4,23%) cases; vycril in 4 (5,64%) cases; PTFE in 27 (38,1%) cases. In 40 patients the prosthesis was positioned in the preperitoneal location (56,33%), in the remaning 31 (43,67%) intraperitoneally placed. Concerning the total 27 prosthesis in PTFE, they were subdivided in the following: 12 Soft Tissue Patch; 9 Mycro-Mesh; 4 Dual-Mesh; 1 Mycro-Mesh PLUS; 1 Dual-Mesh PLUS. A subcutaneos aspiration drainage was constantly left in-situ. Before the surgical treatment all patients were submitted to a prophylactic antibiotics.
RESULTS: Operative mortality was nil; immediate postoperative morbidity on the whole was 15,49% (11/71), as follow: 3 superficial infections; 4 deep infections; 1 hematoma; 3 seromas. Only in one case of deep infection it was necessary to remove the prosthesis. Patients follow up showed relapse in 3 cases (4,2%). **DISCUSSION and CONCLUSIONS:**The treatment of strangulated laparoceles represent a great surgical emergency and in conclusion we can safely state that, in presence of a strangulated laparocele, may be used also the prosthetic materials for surgical treatment, besides the direct plastic surgery; this is to be attributed to the availability of synthetic polymers highly biocompatible and ever more suitable to the needs of the surgeon, and also to the refining surgical techniques which allow to obtain the best possible use of its characteristics. **REFERENCES:** Trivellini G.: The emergency treatment of voluminous laparoceles. G Chir 1993 Sep; 14 (7): 337-43.

NON OPERATIVE MANAGEMENT OF BLUNT HEPATIC INJURIES

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Blunt on penetrating trauma is often associated with injuries to the spleen. The non surgical approach for the management of blunt haepatic injuries is appropriated for a select subset of patients. This nonoperative management is feasible for grade I, II and III liver injuries (Organ Injury Scaling Comitee of the American Association for The Surgery of Trauma); in any case this patient must be hemodynamically stable.
Nonoperative management is currently considered of choice in over 50% of adult patients with blunt liver injury.
Recent reports by Meredith (J. Trauma 1994) and Croce (Ann. Surg. 1995), document of select patients with more extensive injuries (grade IV and V) could be managed nonoperatively.
In a review of 495 patients with nonoperative management for grade I, II and III liver injuries 98,5% of these patients avoided surgical intervention. Only 5% required surgical intervention (bleeding, hepatic abscesses and ”biliomas”) (Feliciano, Surg. Clin: North. Am. 1996).
Ultrasonography and CT scan are now widely used in the initial diagnostic workup of adult trauma victims with suspected intra-abdominal injuries. These tecniques determinate the exent of liver injury and identification of athr nonhepatic abdominal injuries.
A multicentric study was retrospectively undertaken to asses management of blunt hepatic injuries in 100 patients.
Twentytwo (22%) patients were managed nonoperatively.
Two patients (9%) failed at observation an underwent to laparotomy.
The complication were bleeding (1pz), bile collections (1pz).
Deaths not occurred amoung patients with grade I, II and III who underwent nonoperative management.

Meta-traumatic rupture of a splenic teratoma

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Introduction. Splenic teratoma is uncommon and usually asymptomatic. The most serious complication is rupture presenting as a surgical emergency. We describe a case of rupture of spleen with occult teratoma occurring after very minor trauma. This occurence has not been described previously.
Case report. A 63-year-old man was referred to our Institution for left upper abdominal pain after having experienced blunt minor trauma one day before. There was no past medical history of note. Haematological results showed anaemia (haemoglobin 8.0 g/l) with normal platelets and white cells count. Ultrasonographic examination showed the presence of free abdominal fluid and irregular margins of the spleen with large subcapsular hemorrhage. Investigation proceeded to abdominal CT. A helical-acquisition study (Somatom 4 Plus, Siemens-Germany, 8 mm recontructions of a pitch 1:1) of abdomen and pelvis with intravenous admistration of contrast medium, confirmed the US findings with better demonstration of the traumatic lesion of the spleen and showed a few peripheral calcifications. Splenectomy was performed, and solid mass with tooth bud were founded in the spleen. Histological examination demonstrated a teratoma. We describe the radiological, surgical and histological findings.
Discussion and conclusion. Teratoma of the spleen is a rare entity. Rupture of teratoma is an infrequent but serious complication, which usually presents as abdominal emergency prumpting immediate surgery. Potential pitfalls in diagnosing splenic trauma also included congenital splenic cleft. CT is now widely accepted to the best imaging technique in blunt abdominal trauma, but the US can also have an important role. In summary the presence of pre-existing lesions should be considered when visceral organ ruptured occurs with minor trauma.

Active bleeding (contrast medium extravasation) after blunt abdominal trauma: detection with helical Computed Tomography

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Introduction. The possibility to detect active contrast medium extravasation in patients with abdominal trauma by using conventional Computed Tomography (CT) has already been described, though in small series. We report our experience with helical CT and we discuss the diagnostic and clinical value of this finding.

Methods. We evaluated 42 consecutive subjects with upper abdominal trauma by using contrast-enhanced helical CT (single-phase acquisition in 30 cases and double-phase acquisition in 12) and power injection. The CT studies and clinical records of the 13 patients (30%) with contrast extravasation, assessing were reviewed for: leak site, CT appearance, visualization of involved vessel, abdominal or extrabdominal injuries, CT signs of hypovolemic shock, clinical and surgical data, outcome.

Results. Active extravasation involved: abdominal wall in 1 case (intercostal artery), solid organs in 4 (splenic in 3, hepatic in 1, of the middle hepatic vein in 1), peritoneal cavity (splenic, middle colic, and gastroduodenal artery each in 1) retroperitoneum in 4 (renal pedicle in 2, renal parenchyma in 1, lumbar artery in 1). In all the location corresponded at surgery with the site of active bleeding.

The appearance was localized in 11 cases and diffuse in 2. In 5 it was possible to directly identify the involved vessel. Associated injuries of upper abdominal organs were present in 12 subjects and extra-abdominal trauma in 6. Four had CT features of hypovolemia. One patient died during transport to the operatory room and another after surgery while the remaining survived.

Discussion and Conclusion. Contrast leak is due to ongoing hemorrhage and its detection is critical for urgent treatment. The accurate location allows determining whether surgical management or transcatheter embolization has to be preferred and decreasing therefore the time consumption for bleeding site identification; in multiorgan trauma this sign may suggest the surgical priorities.

Active contrast material extravasation is already recognizable with conventional CT scanners, though it has been considered rare, mainly recognizable in seriously-injuries patients. Helical CT allows rapid acquisition of the upper abdomen with dynamic evaluation and contrast bolus optimization. This technique increases the detection rate and boosts radiologist's confidence in this diagnosis (mainly allowing differentiation from blood clots). Though active bleeding is identified in subjects requiring prompt surgical intervention and may be associated with signs of hypovolemic shock, it should not be considered itself anymore as a negative prognostic factor.

Sonography and Computed Tomography evaluation of the bleeding HCC

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Introduction. Haemorrhage due to hepatocellular carcinoma (HCC) is a rare complication in Western patients and a small number of cases first present with intraperitoneal bleeding. Nevertheless it is a critical and life-threatning condition, developing with acute anemization and haemodynamic instability or insidiously with progressive hematocrit reduction. Immediate diagnosis and accurate assessment are necessary for prompt surgical or transcatheter treatment.

Methods. In the last 3 years we evaluated 10 patients with bleeding HCC: 7 had acute right upper quadrant pain and hypovolemia and 2 showed decreased hematocrit values; 1 more patient was studied after transcatheter embolization. The nodules (5 patients had plurifocal disease) ranged in size from 3 to 8 cm (mean 4,5). All subjects underwent sonography (US) and 8 were also submitted to contrast-enhanced Computed Tomography (CT) (4 with a conventional and 4 with a helical CT unit).

Results. US showed inhomogeneously hypo- or hyperechoic lesions within the hepatic periphery and corpuscolated peritoneal effusion.

CT demonstrated inhomogeneous nodules with dense intraperitoneal fluid and areas of high attenuation (blood clots) near the tumor surface. Helical CT clearly showed hypervascularity of the lesions with better delineation of the pseudocapsule and of its focal interruption/nonrecognition.

In patients treated with embolization CT demonstrated tumor devascularization, embolizing material within the liver parenchyma and vessels, hematoma circumscription and evolution.

Conclusion. Integrated imaging by using US and helical CT may accurately define this complication and consequently suggest the proper management. Tumor detection, characterization and staging, hemorrhage demonstration and quantification, portal vein patency assessment, and post-treatment evaluation may all be rapidly and effectively achieved.

Endocrine Surgery

Adrenal cystic lesions: is surgery indicated?

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Adrenal cyst are rare (0.18% in autopsy series) and less than 500 cases reported in literature. The common use of US, CT and MNI scan has resulted in increasing diagnosis of adrenal masses and cystic lesion. In our Department we observed 154 patients with adrenal lesions; among these 12 (7.8 %) had adrenal cyst. There were 6 men and 6 women, with average age of 40 years (range 15-62). All the cysts were unilateral (7 on the right, 5 on the left); the mean diameter was 9.1 cm (range 3 to 30 cm). About 67 % of the patients were symptomatic (abdominal pain :6, palpable mass: 2, haemorragic shock: 1). Three patient were hypertensive, with non stable arterial pressure values. Each of them had a careful laboratory and instrumental evaluation. No biochemical alteration was observed, even if in 1 case we observed a subclinical hyperfunctioning cystic adenoma. Us, CT and MRI had a sensitivity of 66.7 %, 80 % and 100 % respectively. Adrenalectomy was performed in all patients. We adopted an anterior transperitoneal approach in 9 patients, a lombotomic extraperitoneal approach in 2 cases, a laparoscopic adrenalectomy was performed in the last patient. Post operative complications were observed in only in 1 case (acute cholecystitis, treated conservatively). The pathological findings were: 1 epithelial cyst, 2 endothelial cysts (1 with adenomatous adrenocortical hyperplasia) and 9 pseudocysts. In our opinion surgical management, in absence of absolute controindications, is advisable for all symptomatic cysts, or when suspected malignancy, hormonal secretion or large dimension (> 5 cm) are present. The other cases require a conservative management, with a periodic Us or CT follow- up. We think that percutaneous aspiration of the symptomatic cysts of large dimension in unadvisable, because of recurrences, even after sclerotherapy, and poor diagnostic accuracy only with cytologic examination of the cyst fluid. We believe that adrenalectomy *en bloc*, if possible by laparoscopic approach, is indicated in all cases because of low morbidity and the possible coexistence with other adrenal lesions.

TOTAL THYROIDECTOMY AND SENTINEL LYMPH NODE BIOPSY FOR PAPILLARY THYROID CANCER.

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Role and extension of lymph node dissection for differentiated thyroid cancer are still matter of debate. On one side it is true that the clinical relevance of lymph node metastases is nearly totally obscured by other significant prognostic variables such as age, grading, dimensions, extra-nodal metastases. On the other side, it should be noticed that stratifying such patients upon such variables the rates of recurrence and long-term survival are significantly influenced by the presence of nodal disease. Even though several risk patterns for lymph node metastases were clearly defined, routinary adoption of prophylactic cervical dissection in the absence of clinically detectable nodal disease is generally not accepted as a standard of treatment in the western emisphere. This trend is probably due to the higher rates of morbidity related to cervical dissection (mainly hypoparathyroidism, but also injuries to the recurrent laryngeal nerve), and to the lack of evidence of any benefit related to prophylactic lymphadenectomy in randomized trials. Therefore, the extension of cervical lymph node dissection reported in the literature varies from the complete abstention, to the blind sampling of some nodes, to central neck dissection, to ipsilateral or bilateral neck dissection. Recently, after its reported use in breast cancer and melanoma, sentinel lymph node biopsy was suggested also for differentiated thyroid neoplasms (1). We therefore decided to start a phase II trial in order to define the technical details of this procedure. Sentinel lymph node is identified using both pre- and intra-operative radiolocation with Tc99m-Albumin, and intraoperative vital staining with CH-40. This presentation shows the procedure performed in a papillary thyroid cancer located in the isthmus, with its sentinel lymph node located in the right paratracheal groove. After the completion of this phase II trial we will start a controlled trial with central neck dissection in order to verify the sensitivity and specificity of the procedure.

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OCCULT CARCINOMA OF THE THYROID.

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INTRODUCTION: The Authors make a personal review of occult carcinoma of the thyroid, and give a evaluation about surgical treatment and the prognosis of this desease.

METHODS: between January 1980 and January 1998, they have operated 441 patients for thyroid disease, and 41 of them for a neoplasm. The diagnosis was maded with clinical examination, ultrasonography, thyroid functional tests, scintiscan, fine-needle aspiration cytology; 18 (40%) of these patients was affected by a minimal carcinoma, that some authors tell "occult" carcinoma, always meaning the same lesion, that is to say, a nodule of dimensions smaller than 1,5 cm. 15 patients (83,3%) were females, and average female patient age was lower than average male patient age (47 *vs*. 62 years). Six cases were a multifocal carcinoma, two presented laterocervical limph node metastasis bilaterally; seven patients were operated with a dubious diagnosis.

RESULTS: postoperative morbidity was 15%; there was no postoperative mortality. The 10 year survival rate is 94,5%. Regarding the histological type, 15 neoplasm (83,3%) were papillary, and remaining were follicular.

DISCUSSION AND CONCLUSIONS: occult carcinoma of the thyroid is related to a good prognosis because scarce biologic aggressiveness; hoewever we believe that it is very important a sufficient surgical radicality, that is to say, ipsilateal lobe-isthmectomy for minimal cancer of the lobe, a total thyroidectomy for multicentric desease. We always have carry out limphadenectomy when nodes were affected. More extensive resections would not bring additional advantages.

ECHO-ENHANCING AGENTS IMPROVE THE OUTCOME OF PERCUTANEOUS ETHANOL INJECTION UNDER COLOR DOPPLER CONTROL OF AUTONOMOUSLY FUNCTIONING THYROID NODULES.

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Introduction: Echoenhancing agents in ultrasound procedures have greatly improved the diagnostic accuracy of ultrasonography, since they are able to modify the acoustic properties of the structures in which they are injected; in fact, they possess acoustic characteristics different from sorrounding medium: galactose microparticles echo-enhancement improves echogenicity in US-B mode and amplifies the Doppler signal, allow to detect flow in very small vessels and at low velocity, and can realize a sort of echogenic mapping of body cavities.

The aim of our study was to evaluate the diagnostic accuracy of echo-enhancers, namely Levovist®, in visualising residual vascular signals in hyperfunctioning thyroid nodules soon after percutaneous ethanol injection (PEI).

Methods: We have investigated 13 patients affected with pretoxic adenoma, 8 of whom harbouring nodules of 2.7-19.3 ml (group A) and 5 with nodules of 20.7-30.5 ml (group B). All patients were subjected to PEI under color Doppler ultrasound control, by means of a Vingmed Sonotron CFM 725 with APA 7.5 MHz transducer.

Results: Group A patients were subjected to 2-4 PEI sessions whereas group B patients underwent a "single session" PEI; in each session the amount of ethanol injected per session was calculated on the basis of nodular volume and of intranodular ethanol diffusion, ranging between 0.5-1.5 ml/ml nodular volume. When complete treatment was achieved (no more vascular signal inside the treated nodules at CD) the operator performed an i.v. injection of Levovist® 2.5 gr (300 mg/ml) in bolus during 20 seconds.

Discussion: CD was not able to detect, in both groups, any vascular signal in the treated nodules at the end of treatment, conversely after Levovist injection, one patient of group A showed residual peri and intralesional vascular spots whereas two showed perilesional vascular signals; similarly, among the group B, two patients showed peri and intralesional vascular spots and one showed perilesional vascular signals. On the basis of these findings, we could perform one further ethanol injection hiting the nodular areas showing residual vascular signals.

Conclusion: Echo-enhancing agents can be very useful in detecting the persistence of vascularized nodular areas during PEI treatment of autonomously functioning thyroid nodules, improving the diagnostic accuracy of Color Doppler ultrasound procedure. In addition, their application could be of great usefulness during the follow-up of the treated nodules.

SECONDARY HYPERPARATHYROIDISM: WHICH SURGICAL TREATMENT?

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A prolonged chronic deficiency of calcitriol, secondary to long-standing renal failure, is the major cause of increased secretion of parathyroid hormone (PTH) and hypertrophy and hyperplasia of parathyroid glands. In advanced cases surgical removal is warranted.
Three types of surgical techniques have been proposed for this disease. The first technique was subtotal parathyroidectomy (sPTX), then total parathyroidectomy (PTX) and finally total parathyroid with auto-transplantation (PTX+AT) of fresh parathyroid tissue was suggested. In 1991, Rothmund et al carried out a randomized trial (sPTX vs PTX+AT): they concluded that PTX+AT is preferable to sPTX for patients with renal osteodystrophy.
Between March 1993 and March 1996, 19 consecutive patients were operated on at the University of Rome, Department of Surgery, for the teatment of secondary hyperparathyroidism (HPT). Eighteen had been receiving long-term hemodialysis and one had a functioning renal graft. The procedure involved the excision of all identified parathyroid glands and intraoperatively microscopically examination to confirm the diagnosis. Twenty pieces of tissue were implanted into the brachioradialis muscle of the arm opposite that in which the arteriovenous fistula had been placed for dialysis. Surplus fragments were sent to the laboratory for cryopreservation. During the first 48 hours, supplemental calcium was given intravenously according to serum calcium concentrations. Sequently, during the first month, calcium and calcitriol supplements were administered orally. The objective effects of surgical treatment on clinical symptoms and the function of the parathyroid glands were evaluated prospectively in all patients by measurement of the serum calcium, phosphorus, alkaline phosphate, and PTH concentrations. The duration of follow-up ranged from 13.6 to 50.6 months (mean + SE, 27.9+ 2.9 months). Eighteen patients were followed up; 1 (5%) of the 19 patients died 50 days after surgery of a cerebrovascular accident. No perioperative complications occurred. Improvement, defined by a return to normal in the clinical and laboratory variables that indicate secondary HPT, occurred in 13 (72%) of the patients. There were 2 cases (11%) of postoperative hypoparathyroidism. In 2 of 18 patients (11%), recurrent HPT developed and in 1 experienced persistent HPT. The most appropiate operation for secondary HPT remains a matter of debate. In our experience, PTX+AT effectively relieved the symptoms of hyperparathyroidism, and a low rate of recurrence of HPT was associated with this procedure. The method used for the surgical treatment of secondary HPT depends on the surgeon's preference, because the data reported in the literature indicate that all procedures described result in good control of clinical and biochemical variable.

THE ACCURACY OF FNAB IN BENIGN AND MALIGNANT NEOPLASMS OF THE THYROID

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In our Surgical Department, between January 1990 and December 1998, 803 patients affected by thyrotic pathology have undergone a surgical treatment. Of these, 469 (58.4%) have been diagnosed as benign or malignant neoplasms. In this study, the Authors considered 296 patients (36.8%) who underwent Echo-guided Fine-Needle Aspiration Biopsy (FNAB) before surgical treatment. Aim of this study is to evaluate the effective accuracy of cytodiagnostic by FNAB related to postoperative histologic examination. The 296 cases examined have been histologically classified as follows: 214 adenomas (72.3%); 11 follicular carcinomas (3.7%); 31 papillary carcinomas (10.5%); 16 papillary occult carcinomas (5.4%); 3 medullary carcinomas (1%); 2 undifferentiated carcinomas (0.7%); 2 lymphomas (0.7%); 17 Hurtle adenomas (5.7%). Nine (3%) of the 296 FNAB resulted discordant with the postoperative histologic examination (6 false-negatives and 3 false-positives). Within the 6 false-negatives we must note one case which the needle aspiration had been done in the context of a simple cyst of right thyroid lobe and the postoperative histologic response of malignant neoplasm (papillary carcinoma) had been in the left thyroid lobe. We also noted a cytological response of follicular proliferation in which context the postoperative histology demonstrated a follicular variant of papillary carcinoma. In one case of false-positive, a follicular carcinoma had been suspected by FNAB, whereas the postoperative histology demonstrated a focal nodular thyroiditis. Our study showed that in 97% of the cases the FNAB resulted according to the postoperative histologic examination. The Authors concluded that FNAB for the study of benign or malignant neoplasms is to be considered a reliable method since it presents a high cyto-histologic correlation that, with the easiness of performance, justify its widespread use in clinical practice.

PAPILLARY CARCINOMA OF A THYROGLOSSAL DUCT CYST: A CASE REPORT

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Cysts of the thyroglossal duct are common congenital abnormalities; the risk of malignant change is very low, less than 1%: since 1911 almost 200 cases are reported in literature, 85% of which were papillary adenocarcinomas. Mortality is quite low: 2% after 5 years. The diagnosis is often obtained postoperatively by pathology after Sistrunk procedure. FNAC is often not adeguate to perform the diagnosis preoperatively, obtained only in less than 10% in Mayo Clinic experience. The appropriate treatment for this condition is still controversial. Some authors suggest that Sistrunk procedure is adeguate therapy for malignant thyroglossal duct cysts; others recommend to add total thyroidectomy because of the possibility of intrathyroidal foci of cancer, between 11,4% and 33% in literature. Other experiences report no significative differences in mortality after 10 years between total thyroidectomy and Sistrunk technique alone. We report a case of a male patient, 52 years old, presenting a 43 mm cervical midline cystic swelling whose FNAC resulted negative. The cyst was excised and pathology revealed a carcinoma of the thyroglossal duct involving the wall and pericystic tissues. Total thyroidectomy and central node lymphectomy was performed; no additional neoplastic foci were found inside the gland; metastasis in 2 lymphnodes of central district and a residual carcinoma of 2,7 mm in the pericapsular tissue were identified. Radioactive ablation of suspected neoplastic remainant was then performed. At a follow up of 1 year the patient is still alive without documented local recurrence or distant metastatic involvement; thyroglobulin is not dosable and thyreoscintigraphy does not show residual thyroid tissues.

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MINIMALLY INVASIVE ENDOCRINE SURGERY

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Endocrine surgery represent one of the most interesting field of application of the new minimally invasive surgical techniques.

Laparoscopic adrenalectomy, first performed in 1992, is now accepted as the gold standard for surgical treatment of adrenal diseases. Although it was initially indicated for small adrenocortical benign neoplasms, today's experience allows to consider laparoscopic approach indicated for incidentalomas, functioning cortical adenomas and pheochromocytomas as well, up to 10 cm in diameter.

As well as for other malignancies, laparoscopic approach is not recommended for adrenocortical carcinoma. In the largest series pubblished up to date, Gagner reports 100 cases of laparoscopic adrenalectomy with low morbidity, no mortality and a conversion rate of 3%.

Regarding minimally invasive parathyroidectomy, it is gaining more acceptance among endocrine surgeons although it is still performed by very few surgeons. A few different techniques have been described up to date, from the totally endoscopic method used by Gagner to the videoassisted low gas pressure technique of Miccoli up to the totally gasless radioguided parathyroidectomy described by Norman.

Minimally invasive thyroidectomy represents an even newer surgical progress and is still to be considered experimental. Very few cases have been reported up to date with (Gagner, Young) or without use of gas (Bellantone). Husher reported a combined technique using both low pressure insufflation of CO2 and a lifter device.

Advantages of minimally invasive surgery of the neck would be better cosmetical results and better visualization of structures due to the magnification of laparoscope with consequent possible reduction of operative complications.

Gas insufflation of the neck has shown to be responsible of some adverse metabolic and hemodinamic effects. In our exeperience CO2 neck insufflation in pigs showed to be safe up to 10 mm Hg, without producing hypercarbia and cardiopulmonary complications.

Next years will probably bring a new era for endocrine surgery due to the trend towards less invasive surgical techniques.

Prognostic factors in minimal thyroid cancer

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Introduction

Thyroid cancers of less than 1,5 cm in the largest diameter are defined as minimal thyroid cancer (MTC). These tumors are a common incidental finding at autopsy and in thyroid glands excised for other pathology. These tumors can metastatise and can cause significant morbidity and mortality. Clinical significance and optimal operative procedures of these lesions are still questioned. We studied 35 MTC in order to identify clinical and histologic characteristics as prognostic factors and to establish therapeutic management strategies.

Materials and methods

From Janaury 1988 to December 1998, 177 patients with a primary thyroid cancer underwent surgery in the Department of endocrine-surgery of Catholic University in Rome: 35 of them (19,7 %) had a MTC.

Results

In the post-operative follow-up 13 of the patients with MTC had a lynphonode recurrency or distant metastases. Careful hystologic examination showed multifocality in 12 patients, capsular infiltration in 10 patients and a solid tumor in 9 patients.

Conclusions

MTC are common and they are associated with a good prognosis. The recommendations for the treatment of this subgroup vary widely, depending on clinical presentation and hystologic feature. Our multifactorial analysis has identified as important risk factors: capsular infiltration, solid lesion and multifocal disease. In these cases total thyroidectomy is mandatory.

PREOPERATIVE DIAGNOSIS OF THYROID TUMORS USING THYROIOD SCINTIGRAPHY AND FINE-NEEDLE ASPIRATION CYTOLOGY. RETROSPECTIVE STUDY IN 644 SURGICALLY TREATED PATIENTS.

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INTRODUCTION. The aim of this study was to analyze usefulness of thyroid scintigraphy (TS) and fine-needle aspiration (FNA) cytology in preoperative diagnosis of thyroid nodules in patients with nodular thyroid disease undergoing surgery.

PATIENTS AND METHODS. Between 1987-1998, 644 patients (median age 41 years, range 14-81 years) underwent surgery for nodular thyroid disease. There were 129 (20.0%) men (median age 47 years, range 17-74 years) and 515 (80.0%) women (median age 41 years, range 14-81 years). Thechnetium-99m pertechnetate (1-10mCi) thyroid scintigraphy were performed in 341 (52.9%) patients, and in 366 (56.8%) patients adequate preoperative FNA cytologic samples, both ultrasound-guided and conventional, were obtained. All patients underwent thyroidectomy and subsequent histological examination.

RESULTS. Hyperplastic thyroid nodules were found in 399 (62.0%) patients and thyroid tumors in 245 (38.0%). One hundred and fifty-four (23.9%) patients had follicular (21.3%) or Hurthle-cell (2.6%) adenoma: M=121 (78.6%) and F=33 (21.4%). Cancer was found in 91 (14.1%) patients: M=22 (20.9%, median age 52 years, range 33-74), F=69 (75.8%, median age 46 years, range 17-81). No differences (p=NS) in age between F and M in both groups (42.54±13.83 *vs* 42.48±15.44 and 46.11±13.74 *vs* 52.05±10.87 years, respectively) were found. True positive result was considered to be: (1) TS showing a cold thyroid nodule in patients with nontoxic nodular goiter, and (2) FNA cytology showing follicular tumor or papillary, medullary or undifferentiated thyroid cancer. In the diagnosis of thyroid tumor and cancer TS was 92.0% and 90.8% sensitive, whereas FNA cytology sensitivity was 95.7% and 87.1% respectively. Specificity, positive predictive value (PPV) and negative predictive value (NPV) were the following: (1) for thyroid tumors 72.1%, 68.9%, 93.0% (TS) and 98.4%, 98.3%, 96.3% (FNA cytology); (2) for cancer 77.4%, 53.5%, 96.7% (TS) and 99.0%, 94.1%, 95.6% (FNA cytology).

CONCLUSIONS. In diagnosis of thyroid tumors TS specificity and PPV is low, however FNA cytology fails to reveal cancer in most patients with (rare) follicular carcinomas. TS may improve sensitivity and NPV in patients with nontoxic thyroid nodules and uncertain FNA cytology.

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Hyperthyroidism and concurrent thyroid carcinoma: a need for different surgical strategy?

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INTRODUCTION During the last two decades the association between hyperthyroidism and differentiated thyroid carcinoma has been increasingly reported, thus contradicting the historical statement that "thyreotoxicosis is an ensurance against cancer" (Means,1937).

METHODS A retrospective analysis has been carried out to evaluate the prevalence of thyroid malignancies in 326 hyperthyroid patients surgically treated at our department over an 11-year period (Jan.'88–Dec.'98). Out of the total patients, 121 [37.1%] had a solitary Toxic Adenoma (TA), 175 [53.7%] had Toxic Multinodular Goiter (TMG) and 30 [9.2%] Toxic Diffuse Goiter (TDG or Grave's disease). A differentiated papillary or follicular thyroid carcinoma was detected in 25 of the total cases with an overall incidence of 7.6%. 21 out of 25 differentiated cancers were diagnosed postoperatively. Fine needle aspiration biopsy (FNAB) revealed evidence of malignant cells in 1 case, but it must be stressed that only 31.8% of the patients in this series underwent FNAB preoperatively; in other 3 patients the presence of differentiated cancer was detected at intraoperative frozen section. Concurrence of hyperthyroidism and thyroid cancer appeared to be more frequent in patients with TMG [8.6%] and TDG [10%], than in patients with solitary TA [5.8%].

DISCUSSION According to our protocol, a total extracapsular thyroidectomy was performed in all cases, not differently than in all benign cases with TMG and TDG. Out of the total 326 patients, a reoperation was therefore needed only in 2 cases who underwent emithyroidectomy, according to their preoperative diagnosis of TA confirmed by intraoperative frozen section. In 18/25 patients the tumor showed a maximum diameter of less than 1 cm and capsular invasion or multifocality were never detected; consequently a concomitant or delayed lymphoadenectomy was not required. All patients in this series are currently alive and apparently free of residual disease in the neck at regular follow-up [average: 60.6 months; range: 3-120 months].

CONCLUSIONS Provided that Extracapsular Total Thyroidectomy is the operation of choice for Multinodular and Diffuse toxic goiters, the adoption of a different surgical stategy is not needed in hyperthyroid cases, udependant upon a possible delayed diagnosis of differentiated thyroid cancer. In such cases that account for 7.6% of all hyperthyroid cases in our series, reoperation and/or extension of the exeresis to the cervical nodes are rarely indicated, according to tumor staging.

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Evaluation of recurrential lesions after thyroid surgery

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In order to appraise the functionality of the laryngeal inferior nerves of patients with indication for thyroid surgery it is essential a pre- and post-operative phoniatric examination.

Materials and methods. From October 1996 to December 1998 we have executed a phoniatric evaluation upon 210 patients who had undergone thyroid surgery. Every patient has undergone a videolaryngostroboscopy with stiff optical fibres at 70° (for the appraisal not only of the laryngeal morphology and mobility but also of the wideness and symmetry of the vibratory mucous waves) and a spectrographic analysis with a narrow side filter. The spectrographic analysis was performed according to Yanagihara's classification.

Results. *Pre-operative evaluation*: 2/210 patients presented a monolateral palsy of the vocal fold (1 previous hemithyroidectomy, 1 immersed goitre) and 19/210 a benign neoformation of the vocal chord (13 oedema of the free edge of the vocal fold, 2 nodules and 4 polypuses). All these patients had a disphony documented by an alteration of the spectrographic tracing. *Post-operative evaluation (second day)*: 22/210 patients presented a monolateral chordal palsy (9 on the right and 13 on the left) that in 2 cases presented only minimal modifications of the spectografhic tracing. After 6 months from surgery, at last, in only 6 patients it was documented the presence of palsys (in 3 of which it has been executed a total thyroidectomy for invasive carcinoma). In our surgical experience we have never had complications such as bilateral palsy of the vocal folds or lesions of the external branch of the higher laryngeal nerve.

Conclusions. In thyroid surgery phoniatric evaluation is useful to diagnose probable causes of disphony pre-existisg the operation and possible iatrogenic damages of laryngeal nerves that, in a limited number of cases, can also be asymptomatics. When a chordal palsy is revelead, however, a careful follow up of the patient is necessary not only to appraise the eventual restoration of the laryngeal mobility, but also to identify the need of a suitable treatment of recovery.

SURGICAL TREATMENT FOR PRIMARY HYPERPARATHYROIDISM

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OBJECTIVE: To document the recent surgical results in the treatment of primary hyperparathyroidism (PHPT) at 3rd Department of General Surgery, University "La Sapienza", Rome, Italy.

METHODS: From January 1970 to December 1998, 137 patients underwent surgical treatment for PHPT. Biochemical diagnosis of PHPT was obtained in all cases. Preoperative localization by ultrasonography was attempted in all cases and, in recent times, all patients were routinely studied by scintigraphy and magnetic imaging of the neck and chest.

RESULTS: The histologically confirmed cause of PHPT was single adenoma in 109 cases (79.5%), treated by excision of adenoma plus uni- or multiglandular biopsy in 87 cases (79.8%), excision of adenoma plus every glandular biopsy in 22 cases (20.2%); single adenoma combined with multiglandular hyperplasia in 14 cases (10.2%), treated by excision of adenoma and hyperplastic parathyroids plus other glandular biopsy in 12 cases; primary multiple hyperplasia in 9 cases (6.5%), treated by subtotal parathyroidectomy; adenocarcinoma in 5 cases (3.6%) treated by excision of the tumour combined with ipsilateral emithyroidectomy and lymphectomy. Recurrent PHPT was observed in 3 cases (2.2%), while persistent PHPT in only one case (0.7%).

Transient post-operative hypoparathyroidism was observed in 41 cases (29.9%), while permanent post-operative hypoparathyroidism was observed in only 3 cases (2.2%).

CONCLUSION: Surgical treatment for PHPT is a safe procedure and is associated with a high success rate (96.3%) and a minimal complication rate (0.2%).

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Total thyroidectomy and differentiated tumours of the thyroid in our experience

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Introduction. Differentiated forms represent over 80% of hystotypes of the cancer of the thyroid. Unfortunately, surgical treatment for the same neoplastic lesion can be very different ranging from simple lobectomy to total thyroidectomy with lymphadenectomy and with emptyng of the anterosuperior mediastinum.

Patients and Methods From january 1981 through december 1998, 739 thyroid interventions were performed. Malignant tumors were 118. 106 differentiated forms were encountered, including 61 (57%) papillar and 27 (25%) follicular carcinomas.
In differentiated forms, tumors at initial stage (T1-2, N0) were 78 (73%), whereas only 4 patients (3,7%) had distant metastases.
Patients' age ranged from 4 to 84 years. Females were 83 (78%) and males 21 (19%). Follow-up time ranged from 6 months to 16 years.

Results 79 total thyroidectomies, 15 total thyroidectomies with lymphadenectomies, 3 subtotal thyroidectomies and 21 lobectomies with subsequent radicalization were performed.
98 patients are alive and well, so disease-free survival is 92,3%. During the postoperative period 2 (1,8%) paralyses of the recurrent homolateral nerve, 8 (7,5%) temporary hypoparathyroidism, 2 (1,8%) permanent hypoparathyroidism occurred.

Discussion and Conclusion
In case of certain preoperative diagnosis, our preference leans toward total thyroidectomy: that is justified by the frequent multicentricity of the tumor, lesser risk of local and distant relapse, possibility to perform postoperative total body isotope-scanning for possible identification of metastases, the use of thyroglobulin in cases of non-captating new localizations. Lymphadenectomy at the time of surgery cannot be considered mandatory since survival is not influenced by lymphatic metastases.
In case of uncertain preoperative diagnosis surgery must be limited to total extracapsular lobectomy, postponing the final surgical decision to definitive hystologic exam: so, papillar carcinoma will warrant surgical radicality; in case of follicular carcinoma we improve thyroidectomy since vascular invasion and infiltration of surroinding parenchyma is a greater risk of local relapse and distant metastases.
Due to evolutive uncertainties of differentiated carcinomas of the thyroid, on the basis of the survival rate of our patients, we believe that a radical protocol can be safer.

Endoscopic Surgery

ENDOSCOPIC BILIARY STENTING IN THE TREATMENT OF DIFFICULT LITHIASIS

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INTRODUCTION: Large or multiple stones is difficult to remove by endoscopy from the common bile duct (CBD), expecially in presence of biliary alteration. Other than conventional methods stone extraction (basket, balloon), are available others complicated techniques (mechanical electrohydraulic and laser lithotripsy, ESWL) that need of and a good team and a long time. Therefore when at the first endoscopic approach complete clearance of CBD fails, it is necessary to prevent bile duct occlusion and it's easy by insertion of temporary stent. The inserted stent can become permanent in elderly and high risk patients.
METHODS: Eighteen patients (12W-6M) with a mean age of 78 years (range 65-91) with bile duct stones, had stents placed, previous sphincterotomy (ES), when endoscopic stone extraction by conventional methods failed. The stones were 3 or more in 12 patients (7-20mmØmax), in 6 patients there was just a big stone (2,5cmØmax).
RESULTS: There were no complications of stent insertion; 2 stents migrated into duodenum early and were replaced; 4 patients developed biliary symptoms (cholic, fever, jaundice, cholangitis) of stent occlusion after 4-31 months; 2 stents were changed and in 2 patients was possible to remove all stones. In 3 patients (65-69years), without symptoms, the endoscopic treatment was effected 4-7 months after stent insertion, to remove bile duct stones considerating high life expectancy of patients, their good conditions and it was a success. After 24 months follow-up, 2 patients died a natural death, 5 patients were lost , the remaning 6 stenting patients were in good health.
DISCUSSION: Complete clearance of stones from CBD using standard extraction methods is around 90-95%, it can reach 98% with use of other techniques. At the first endoscopic approach, extraction duct stones failure can justifie the use of temporary stenting to avoid biliary complications. Sometimes the stent can become permanent stenting in high-risk and elderly patients. The complications of long-term stenting seem to be between 13-50% and probably increase with the presence of the gallbladder, the absence of ES effected previous stenting, the high life expectancy. Therefore the therapeutic choice has to balance the risk of stenting against the risk of surgery, that seems to increase with the patient age. Even if others study about permanent stenting are necessary , its usefulness seems to have a rational support. Infact the stenting at the first allows a good drainage and avoids possible complications, and then it is always possible to repeat the endoscopic treatment, to try stones extraction that often, probably because stones are smaller and more friables than at the beginner their removal can be complete.
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QUALITY LIFE IMPACT OF SELF-EXPANDING METAL STENTS IN UNRESECTABLE ESOPHAGEAL CARCINOMA:RESULTS OF A STUDY IN 107 PATIENTS

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Introduction Self-expanding metal stents are a new alternative for palliation of esophago-cardial malignancies. We evaluated the impact of these stents on the quality of remaining life in patients affected by inoperable esophago-cardial cancer.
Methods Between september 1992 and september 1997, 107 patients underwent implantation of self-expanding metal stents for palliation of dysphagia due to esophageal or cardial cancer (76 patients) or for locally recurrent carcinoma after surgery (14 patients), laser-therapy (13 patients) or radiotherapy (4 patients). Stents were implanted under radiological control and endoscopic control, in patients under standard-middle sedation.
Results Successful stent implantation was achieved in 102/107 patients (95.3%). Early complications were observed in 4.9% and per-operative mortality was 1.96%. After stent implantation, the dysphagia score improved from 3.0, on average, to 5.0, on average. Late complications were evidenced in 25.5%. Weight gain was evidenced in 24.5% and the performance status improved in 14.3%. The mean survival time was 6.9 months.
Conclusions Self expanding metal stents are an effective alternative for palliation of malignant dysphagia due to esophageal and cardial unresectable cancers.

POST SURGICAL BILIARY STRICTURES: ENDOSCOPIC TREATMENT BY STENTING

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INTRODUCTION: The treatment of the post-surgical stenosis of the CBD is still a critical problem because of difficulties and risks of surgery and high rate of relapse. Endoscopy is a valid alternative to surgery reoperation and it does not obstacle an operation if it is.

METHODS: Forty-one patients having post –surgical biliary stenosis were enroled for endoscopic treatment. The average of clinical presentation timing from surgery was 13 months (range 2-231). At Ercp the stricture was located at the junction of the cistic duct with the common hepatic duct in 30 cases, in the proximal hepatic duct in three cases and in the distal bile duct in eight patients. In six patients it was not possible to cross the stenosis with the guide-wire for endoscopic stenting. After previously dilation, we introduced one or three polyethylene stents (10-12 French) across the stenosis.

RESULTS: During first three days were observed one acute pancreatitis and two cholangitis, resolved by medical or endoscopical therapy. The endoprostheses were left in place for one year. Four patients were lost in this time. During the stenting period, four (13%) complication, resolved by medical and/or endoscopical treatment, occurred. The mean follow-up after stent removal, has been 28 months (range 6-70). The results were execellent in 20 cases (64.5%), good in six (19.3%), poor in five (16.1%). Two out of five poor patients were treated surgically; three of them were undergone to endoscopic restenting.

DISCUSSION: The biliary stenting has to be considered the first therapeutic approach in case of post surgical stenosis; in fact it presents high percentage of success, and is less invasive, less costly and less disconfortable for the patient, in comparison with surgery and percutaneous treatment. Moreover, the endoscopy can be repeated many times after unsuccessful and it does not preclude surgery if necessary.

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BILIARY TRACT STONES: OUR EXPERIENCE

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INTRODUCTION. Common bile duct stones are an important problem (8-15%) in patients with symptomatic cholecystolithiasis. Althougth in the last decade new diagnostic and surgical techniques have grown-up, it has not been clearly defined what is the gold standard therapy.

METHODS. Starting from March 1990 to December 1998 we have treated 598 patients with gallstones desease; our directories were, in suspected associated choledocolithiasis confirmed by clinical, laboratory and US evidence, preoperative ERCP and endoscopic sphincterotomy if needed and laparoscopic cholecystectomy after 24-48 h.

RESULTS. We performed 598 laparoscopic cholecystectomies; 25 of them (4,2%), suspected of common bile duct stones (two cases of obstructive jaundice) underwent preoperative ERCP with 21 (84%) endoscopic sfintherotomy. In 4 patients we needed laparoscopic cholangiography to ensure stones extrusion; no patients needed post-operative ERCP to complete therapeutic iter. There were no major complications and no mortality.

DISCUSSION. Among many parameters investigated, no single indicator was completely accurate in predicting CBDS before cholecystectomy. They can be grouped as follows: symptom and signs, biochemical index, and imaging techniques. Instead intraoperative procedures, in laparoscopic or laparotomic approach were characterized by high diagnostic accuracy. Regarding to therapeutic procedures there were two different approaches: a sequential therapy which was characterized by preoperatory ERCP in the eventuality of clinical suspect of LBP; at the same time, will be performed an endoscopic sphinterotomy toghether with stones extraction and successively laparoscopic colecistectomy. The second one consisted of "one time" approach with laparoscopic cholecystectomy, colangiography, and then, if needed, choledocolithotomy or trans-cistic removement of the stones. CONCLUSION. At the moment, there is no strong evidence from controlled trials that one procedure is superior to another. However operative and ospitalization times are considerably longer when laparoscopic CBD exploration is added. Our behaviour is represented by sequential approach of LBP. After 24/48 h, valuing amilase index, we perform laparoscopic colecistectomy.

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Endoscopic therapy of external pancreatic fistulas (EPF).

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Aim of this study was to evaluate the closure of EPF by endoscopic treatment. **Materials and Methods.** Sixteen consecutive patients with EPF underwent an attempt at endoscopic treatment from January 1991 to March 1998 (4F and 12 M with mean age 49,6 years, range 21-66 years).Causes of the fistulas were: surgical necrosectomy for acute pancreatitis n=8, surgical drainage of pseudocyst n=3, surgery for abdominal trauma n=1, Whipple resection for pancreatic cancer n=1, firearm injury n=1, Billroth II resection for perforated duodenal ulcer and splenectomy in one patient each respectively. Thirteen biliary and nine pancreatic sphincterotomies were performed, where indicated, to get access of the pancreatic duct. In one patient, with pancreas divisum, access from the minor papilla was required. Aim of endoscopic treatment was to lesser the pancreatic pressure by insertion of a nasal-pancreatic drain. The mean volume of the fistulas was 205 ml/die (range 50-600 ml/die). The mean interval between the diagnosis and treatment was 108 days (range 23-365 days). All patients had been previously treated unsuccessfully with pancreatic secretion inhibitors. **Results.** In 11 out of 16 patients (68,7%) insertion of nasal-pancreatic drain (5-8,5 Fr) was successful by passing the side of duct disruption. In one patient (6,3%) a nasal-anastomotic drain was inserted after duodeno-pancreatectomy. Insertion of a nasal-pancreatic drain failed in 4 patients (25%), due to a tight stricture downstream the pancreatic duct disruption in 3 patients and obstruction of the Wirsung by pancreatic stones, in the last one. Endoscopic drainage was successful in healing the fistulas in all cases in which pancreatic ductal drainage could be achieved. In 7 out of 16 patients (43,75%) a pancreatic stent (8,5-11,5 F) was inserted in the main pancreatic duct, to prevent the EPF relapse n=5 and to complete resolution of EPF n=1. The mean closing time of EPF was 8,8 days (range 2-33 days) where it was possible to obtain endoscopic therapy. One patient died 24 hours after endoscopic treatment from unrelated cause. No relapses were observed in the rest of the endoscopically treated patients during a mean follow-up of 24,7 months (range 3-63 months). A retrogastric pancreatic cyst developed six and eight weeks respectively in two patients with complete rupture of the main pancreatic duct after EPF resolution and stent removing. **Conclusions.** Endoscopic drainage of the pancreatic duct is a safe and successful treatment for EPF and should be considered as a first line therapy when EPF do not respond to conservative treatment.

Endovaginal ultrasound: a new technique to evaluate patients with rectovaginal neoplastic involvement after rectal surgery.

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Introduction

Endovaginal ultrasound is a new technique to evaluate pelvic floor disorders previosly described by Sultan (1994) and by authors (see references).

Methods

Endovaginal ultrasound was carried out using a Bruel & Kjaer Type 1846 ultrasound scanner with a 7 Mhz rotating transducer covered by a latex balloon. The patients were in prone position and the probe was then introduced in the vagina. Multiple axial cuts of the pelvic floor was then recorded with a gradual withdrawn of the probe Ten patients were evaluate (previously treated for rectal cancer) with pelvic or perineal recurrence: five patients with Miles procedures and five patients with low colorectal anastomosis.

Results

Endosonographic findings were diagnostic in all cases of rectovaginal septum involvement (3 patients previously treated with low colorectal anastomosis): recurrence appears as a iperechoic image, disomogeneal with interruption of the rectovagianl septum; in the other two cases recurrence were demonstrated in the lateral perineal area (2 patients) as an iperechoic nodular image. In all patients with Miles procedures recurrence were found in the posterior perineal plane (iperechoic nodular image). The endosonographic findings were in all cases comparable with CT scan images.

Discussion

CT scans, MRI and endorectal ultrasound are actually important to determinate and diagnosticate recurrence after rectal surgery more recently; the authors shows in this paper how a new technique is useful in the diagnosis of perineo-pelvic neoplastic recurrence.

Conclusions

Endovaginal ultrasound is a good technique to evaluate the whole pelvic floor; moreover it seems to be very helpful in the follow-up of rectal cancer in patients with perineal or pelvic floor recurrence.

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BIOENTERIC INTRAGASTRIC BALLOON (BIB):TECHNICAL ASPECTS AND PRELIMINARY REPORTS

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Introduction The BIB® is a small silicone, sterile-saline filled, adjustable in size (400-800 cc), radiopaque valve balloon, partially filling the stomach and inducing satiety. The placement, the volume modification and the removal of the BIB® are endoscopically performed.

Methods From May 1997 to December 1998, 19 patients (mean age 42.1 years; mean weight kg 134.8; mean BMI 47.9; mean EW kg 74.8) underwent to the placement of 27 balloons. The placement technique provides a gastroscopy with biopsy for detection of HP (peptic disease and HP infection are relative contraindications). If there are no problems the balloon catheter, containing the BIB®, is inserted through the mouth and gently moved down below the LES and well within the stomach. Then is filled by sterile saline-metilene blue solution (50:1): so if you have a spontaneous defill the patient will observe blue-colored urine. The mean duration of the entire treatment is 5 months At the close of the treatment the same catheter is used for defill the BIB®. Becose of several failures in the use of reintubation catheter, we develop an alternative technique to achieve a rapid and safe removal of the balloon. The insertion and the removal of the BIB® are performed in standard sedation.

Results At 3-6 months mean weight was kg124.1; mean BMI 43.4; mean WL kg 10.7; mean %EWL 20.1. In one patient, whose weight was 157 and BMI 62.6, a first balloon (450cc) was replaced after 2 months (280 cc). This one was removed after 3 months and 4 months later a third balloon was positioned (380 cc) and then removed after 5 months. Actually, the weight of this patient, with a fourth BIB® inserted (510 cc), is kg 97, the BMI is 31 and the %EWL is 74.5. In 2 cases the spontaneous deflated BIB® passed through the small bowel and the colon and was expelled with the stool. In 4 cases the removed BIB® was covered by mycelial threads of Candida Albicans. In 1 patient we observed, during the treatment, the development of a peptic ulcer (not due to BIB® decubitus) treated with pharmacological therapy (omeprazole for 4 week)

Conclusions The placement ant the removal of the BIB® are no difficult and safe procedure in expert hands. A mean weight loss of 25 kg can be obtained by a restricted diet combined with a BIB®. So the BIB® is indicated to induce weight loss in patients with BMI >30kg/m2 with bad compliance to dietetic, pharmacological and behavioral treatments, patients affected with cardiopathies, type II diabetes mellitus, arthrosis to reduce the surgical risk in superobese patients and to select the patients for restrictive surgery. Anyway the BIB® is not a panacea: is mandatory a correct selection of the subjects and the respect of dietetic rules.

PALLIATION OF GASTRIC CANCER RECURRENCE WITH SELF-EXPANDING NITINOL STENT: CASE REPORT

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Background Gastric cancer recurrence after subtotal gastrectomy represents an advanced stage of disease. Nutrition possibilities are represented by surgical bypass, when possible, jeiunostomy or total parenteral nutrition. The use of metal stents is widely spread in past years for neoplastic esophageal and biliary obstruction.

Purpose The Authors described a case of a recurrent gastric cancer successfully treated with self-expanding metal stent.

Method A 79-years old female patient, submitted three years before to subtotal gastrectomy and BI reconstruction for gastric cancer, was admitted in our Department because of incoercible vomiting and weight loss. Barium swallow demonstrated an almost complete anastomotic obstruction. Endoscopy confirmed radiological data; biopsy on suspected recurrence was positive for adenocarcinoma. TC-scan showed a big perianastomotic mass with pancreatic infiltration. The patient was submitted to operative endoscopy under mild e.v. sedation. Under fluoroscopic and endoscopic control a Savary guide was passed through the gastro-duodenal anastomosis. A dilation with Savary-Gilliard bougies (12.8 mm.) was performed and then a nitinol expandable esophageal stent (Endocoil 18-10-VR) was inserted.

Result Immediate contrast swallow showed a good flow in the duodenum. The patient began a normal oral diet two days after the stent placement. After two months from endoscopic procedure radiological and endoscopic control showed a well positioned and functioning stent. The patient had only rare vomiting and reported a two-kilos weight increase. The patient died for systemic disease after eleven months without vomiting.

Conclusion Stenting for gastric cancer recurrence is technically feasible and safe and allows a normal oral nutrition and a satisfactory quality of life.

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GASTRIC VASCULAR DISPLASIA AS AN UNFREQUENT CAUSE OF UPPER GASTROINTESTINAL BLEEDING

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Introduction

Upper gastrointestinal vascular dysplasia is an unfrequent bleeding cause, affecting approximately on 2 to 5% of the population; bleeding can be severe or occult. The incidence of the disease used to be underextimated until the refirement of diagnostic techniques as endoscopy and superselective mesenteric angiography.

The mentioned imaging can also be integrated with interventive procedures, in alternative to open surgical resective interventions; this therapeutical protocols are demanded, considering the site and the number of lesions and the health status of the patient.

In gastric vascular dysplasia the problem is enhanced by the small number of observations.

Matherials and methods

From March 1° 1993 to May 31° 1998 we observed 5 upper gastrointestinal bleeding due to gastric vascular dysplasia. The five patients underwent an emergency upper gastrointestinal endoscopy in our Department endoscopic Service. 1 out of 5 had a water-melon stomach diagnosed, meaning multiple and diffuse lesion spread to the whole gastric mucosa, looking like a geographic map and with an histological confirm. The remaing 4 subject presented a variable number of lesion, ranging from 1 to 5. The patients health status was good, and we performed in the totality of cases an endoscopic tratment by the means of Nd:Yag Laser and/or sclerotherapy with injection of epinephrine or polidocanole. The number of required treatment ranged from 1 to 7 for a single subject, and an endoscopic follow-up was performed aften 6 and 12 months to all the patients but the one effected by "water-melon-stomach", who is still followed every six months.

Results and discussions

The bleeding was succesfully and permanently obtained in all the cases. In four subjects the endoscopic follow-up showed lesions disappearence; in the "water-melon-stomach" patient the follow-up reveled the lesion number reduction with no evidence of bleeding.

Even if we observed a small number of cases, we belive the endoscopic treatment of gastric bleeding vascular dysplasia is a safe and reliable alternative to traditional surgery, when the patient presents with hemodyamically stable.

GASTROESOPHAGEAL REFLUX DISEASE: ROLE OF *HELICOBACTER PYLORI* INFECTION . A CLINICAL STUDY.

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Introduction: The correlation *Helicobacter pylori* (*H. pylori*) infection and gastroesophageal reflux disease (GERD) it's still debated. The authors studied the role *H. pylori* in patients with GERD with esophagitis and/or hiatal hernia

Methods: We investigate a toltal number of 1105 patients from 1992 to 1997. All patients underwent upper gastrointestinal endoscopy without evidence of peptic ulcer or gastrointestinal tumors and then divided according to symptoms in patients with non-ulcer dyspesia (NUD), (n= 755; M: 436, F: 319, age 45±8 yrs) and patients with GERD and endoscopically proven esophagitis and/or hiatal hernia (n=350; M: 180, F: 170, age 50±12yrs). *H. pylori* was assessed by rapid urease tests, histology and culture performed on multiple bioptic specimens taken from antrum and corpus.

Patients with GERD were furtherly divided in three subgroups: hiatal hernia without esophagitis (n= 125), hiatal hernia with esophagitis (n= 70), esophagitis without hiatal hernia (n= 149).

Results: *H. pylori* was confirmed in 53.8% of NUD and 47.5% of GERD (n.s.). According to GERD subgroups:

	NUD (n=755)	*Hiatal hernia (N=125)*	*Hernia+esophagitis (N=70)*	*Esophagitis (n=149)*
H. pylori infection	53.8 %	42.2%*	39.7%*	55.8%

*p< 0.05 vs NUD and vs esophagitis

No difference in terms of prevalence of *H. pylori* infection was observed as respect to severity of esophagitis (grade1: 48%, grade 2: 53% and grade 3: 50%)

Discussion: A) In our study *H. pylori* is present in about the half of patients with NUD as reported by other clinical study. **B)** Our data not confirm that *H. pylori* prevalence in GERD is lower than in NUD as previously reported by others. **C)** The statistically different prevalence of *H. pylori* among subgroups of patients with GERD supports the concept that different pathogenic mechanisms are involved in the pathophysiology of GERD.

Conclusion: *H. pylori* might play a role in patients with reflux esophagitis without hiatal hernia.

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PRIMARY MALT GASTRIC LYMPHOMAS: OUR EXPERIENCE

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Introduction: Primary gastric B-cell lymphomas originating from the Mucosa-Associated Lymphoid Tissue (MALT) have been demonstrated to be closely associated with Helicobacter Pylori (HP) infection. Different studies have shown that the eradication of HP can lead to regression in about 60-70% of these tumours. In view of histological malignancy (low or high grade) and dissemination of the disease as decisive prognostic factors and therapeutical determinants, endoscopic-bioptical diagnosis as well as endoscopic ultrasound are of major importance **Objectives:** To review the current strategies for the diagnosis and management of MALT lymphomas and to describe the management guidelines used in our Institution. **Methods:** Between July '97- July '98, out of 956 gastric endoscopies performed in out department, 5 were histologically classified as low-grade MALT Gastric Lymphomas, HP positive. The staging procedures included: thoracic and abdominal CT scan; bone marrow biopsy; gastric ecoendoscopy (with no lymph nodes enlargement showed in all cases). All patients were in Stage IE (according to Musshoff Classification). H. P. eradication has been performed with triple therapy (Amoxycillin, Clarithromycin and Lanzoprazole). The patients were seen at endoscopic follow up after 3, 6 9, 15 months and then twice a year. **Results:** all patients are now free of disease and HP negative. **Conclusions:** Eradication of H. P. appears to be an effective therapy in patients with stage IE gastric low-grade MALT lymphoma. Although long-term results are still uncertain it should be the first therapeutic option. Prolonged follow-up (particularly with endoscopy) will be necessary to see whether these remissions are long-lasting. We recommend that HP is eradicated in these lymphomas before referral to other standard treatment.

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PREVALENCE OF GASTROESOPHAGEAL REFLUX DISEASE IN *HELICOBACTER PYLORI*-POSITIVE PEPTIC ULCER DISEASE AND THE SHORT-TERM EFFECTS OF ERADICATION THERAPY.

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Introduction: The correlation *Helicobacter pylori* (*H. pylori*) infection and gastroesophageal reflux disease (GERD) it is still debated. Particularly with the suggestion that *H. pylori* eradication might predispose to the developmant of GERD. To assess the prevalence of associated GERD in *H. pylori*-positive peptic ulcer disease and the short –term impact of *H. pylori* eradication therapy.

Methods: We investigate a total number of 244 (M: 176, F: 68 age 408) patients from 1992 to 1997. All patients underwent upper gastrointestinal endoscopy with *H. pylori*-positive peptic ulcer disease before and at least 4 week eradication therapy. GERD was graded 0= normal, 1=mucosal erythema; 2= erosive change <10% circumference; 3=erosive change 10-50%, 4= erosive change 100%. *H. pylori* was assessed by rapid urease tests, histology and culture performed on multiple bioptic specimens taken from antrum and corpus.

Results: 49 of the 244 patients (20%) had GERD-grade: 1 15(31%), 2 23(47%), 3 7(14%), 4 4(8%). Of 47 patients evaluable after eradication therapy , 25 (53%) had less esevere change with 22 (57%) a normal esophagus, 19 (40%) retained the same grade of GERD and only 3 (7%) moved to a hogher grade. 195 patients had a normal esophagus at initial endoscopy and 190 were evaluable after eradication therapy. 176 (93%) of the 190 patients also had a normal esophagus after therapy and only 14 (7%) had developed GERD.

OF the 215 patients *H pylori*-negative after therapy the recorded grade of GERD remained the same in 83% improved in 11% and worsened in 6%. The corrisponding in the patients who remained *H pylori*-positive after therapy were 77%, 8% and 15% (P>0.05)

Discussion and conclusion: Our results suggest that up to one-fifth of patients with *H pylori*-positive peptic ulcer disease have associated GERD which tends to improve or remain stable in the short term after eradication therapy. In patients with a normal esophagus, the development of GERD is unusual in the short-term after *H pylori* eradication. Reported GERD after *H pylori* eradicatin may simply reflect a pre-existing disease.

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EVALUATION OF THE ESOPHAGEAL MOTOR ACTIVITY IN ACHALASIC PATIENTS: A 24-HOUR AMBULATORY ESOPHAGEAL MANOMETRY STUDY BEFORE AND AFTER LAPAROSCOPIC HELLER AND NISSEN .

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The development and the recent introduction in the clinical practice of 24-h ambulatory esophageal manometry (24-hAEM), seem to be able to improve the study of esophageal motor disorders. **Aim of the work:** was to evaluate, by means of a 24-hAEM, the motor activity of esophageal body in achalasic patients before and after Heller's myotomy (HM) and Nissen's fundoplication (NF). **Material and method:** 12 achalasic patients underwent a 24-hAEM. All patients underwent an laparoscopic HM and NF and after surgical treatment had a further 24-hAEM during follow-up (15.9±9.2 months). We utilised a portable data-logger (Synectics, Med.) with 4 solid-state microtransducers 5 cm apart probe (Konigsberg Instruments) and a software for data analysis. The distal and proximal sensors were positioned respectively 3-5 cm above the LES and 1 cm (in 8 patients) below the UES (swallow index). Control group: 65 normal subjects[(1)]. **Results:** the pre-operative and post-operative total recording time was respectively $22^h50'\pm1^h20'$ and $21^h35'\pm1^h10'$. *Pre-operative data*: the number of contractions/min in the meal-time was increased ($p<0.05$) compared to the upright and night-time, but equal to control group. The contractions amplitude resulted reduced ($p<0.05$) than control group during all periods and it didn't result increased in the achalasic group. The multipeaked waves and the waves with duration >7sec percentage increased ($p<0.05$) as regards to the control group; in the patients group this percentage was higher in the meal-time than upright and night-.time ($p<0.05$). The study of the peristaltic activity showed the presence of peristaltic contractions equal to 29.12±13.41% of the all recorded sequences. This values resulted, obviously, reduced ($p<0.05$) compared to control group. The complete peristaltic sequences resulted equal to 12.19±8.96%. The simultaneous waves were equal to 69.38% in meal-time, 71.82% in upright and 69.01% in night-time. *Pre- vs. post-operative data*: the majority of the evaluated parameters didn't show themselves modified in significant manner, on the contrary the peristaltic activity increased significantly ($p<0.05$) in the treated patients (29.12±13.41% vs. 46.11±14.79%). Furthermore we observed a statistically significant ($p<0.05$) improvement of the primary peristaltic activity during meal-time (26.56±12.8% vs. 46.81±17.97%) **Discussion:** our data surprisingly showed the presence of a peristaltic activity (29.12%), in achalasic esophageal body, and complete sequences in the 20%. The improvement of the peristaltic activity which was evidenced after the surgical abolition of the functional sphincterial rub, propose again the question about the fall of the peristaltic activity of the esophageal body, which could be consequent to the hard transit through the LES. This preliminary data seem to confirm, in qualitative and quantitative manner, the positive effect of the HM and the null effect of the NF on the esophageal transit.

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